

**Regional Water Quality Control Board
Central Valley Region
Board Meeting – 23/24 October 2008**

**Response to Written Comments for
The City of Stockton – Regional Wastewater Control Facility
Tentative Waste Discharge Requirements
3 October 2008**

At a public hearing scheduled for 23/24 October 2008, the Regional Water Quality Control Board, Central Valley Region (Regional Water Board) will consider adoption of a renewed National Pollutant Discharge Elimination System (NPDES) permit and Time Schedule Order (TSO) for the City of Stockton Regional Wastewater Control Facility. A tentative NPDES permit and TSO were issued on 18 August 2008. This document contains Regional Water Board staff responses to written comments received from interested persons. Written comments from interested persons were required to be received by the Regional Water Board by 22 September 2008 for the tentative Orders in order to be included in the record. Comments were received by the deadline from the following parties:

1. City of Stockton (City or Discharger),
2. Central Valley Clean Water Association (CVCWA),
3. California Sportfishing Protection Alliance (CSPA), 7 September 2008
4. CSPA, 22 September 2008
5. South Delta Water Agency,
6. Niagra Water,
7. California Urban Water Agency (CUWA), and the
8. San Luis & Delta-Mendota Water Authority (Authority) and Westlands Water District (Westlands)

Written comments are summarized below, followed by Regional Water Board staff responses.

CITY OF STOCKTON COMMENTS

CITY OF STOCKTON COMMENT # 1: “On behalf of the City, I [Mr. Mark J Madison, Director of Municipal Utilities] would like to thank you [Mr. James D. Marshall, Senior Engineer] and your staff [Ms. Gayleen Perreira, WRCE] for your efforts in putting forth the Tentative Order. In general, the City believes that it can substantially comply with the Tentative Order and supports a majority of the provisions contained therein.”

Response: Comment noted.

CITY OF STOCKTON COMMENT # 2: The City is concerned with the alternative seasonal limitations for electrical conductivity (EC) of 700 µmhos/cm (1 April – 31 August), and 1,000 µmhos/cm (1 September – 31 March). It is our understanding that these proposed final effluent limits have been imposed based on a belief that the South Delta water quality objectives apply to the City’s point of discharge. (Tentative Order at p. F-39) The City contends that the South Delta water quality objectives are not an appropriate basis for regulation of the RWCF (Facility), because the City’s point

of discharge on the San Joaquin River is over 6 miles downstream of the Brandt Bridge, and the City's mixing zone for its discharge extends only 3.5 miles upstream. (Tentative Fact Sheet at p. F-21)

The City contends that it is not appropriate to include final effluent limitations for EC in the proposed Order, especially based on the South Delta salinity standards, considering the number of unknowns, and in particular, the impact that all of these processes may have on water quality in the San Joaquin River. The City further states that the water quality in the Delta is currently at the center of many processes, including but not limited to the Delta Vision Process, the Bay Delta Conservation Plan, State and Regional Water Boards Strategic Plans for the Delta, development of a Central Valley and Delta Salinity Management Plan, and multiple efforts to address pelagic organism decline. In addition, the South Delta salinity standards are currently under review by the State Water Board in accordance with implementation provisions contained in the Bay-Delta Water Quality Control Plan, which includes an updated, independent scientific investigation of irrigation salinity needs in the southern Delta.

The City further contends that when there are no adopted numeric objectives, and when the Regional Water Board intends to rely on the Agricultural Water Quality Goals, the Regional Water Board is required to consider site-specific factors. (WQO 2004-0010) If site-specific information is not readily available, it is appropriate to require a study to obtain the relevant information before adopting effluent limitations based on the agricultural water quality goals (See WQO 2004-0010 and Order No. R5-2008-0055)

Request: Remove the proposed effluent limitation for EC, and instead, include the following interim limitation for EC:

This Order contains interim limitations for electrical conductivity (EC). This Order requires the Discharger to update and implement a pollution prevention plan for salinity in its discharge to the San Joaquin River. A final EC limit may be included in a subsequent renewal or amendment of this Order if the State Water Board adopts new or revised water quality objectives for salinity in the Delta that would apply to the San Joaquin River where the Discharger discharges its effluent.

Response: The State Water Board's Bay-Delta Plan establishes water quality objectives at various "compliance points" in the estuary to protect beneficial uses. The Bay-Delta Plan at page 10 states: "The water quality objectives in this plan apply to waters of the San Francisco Bay system and the legal Sacramento-San Joaquin Delta, as specified in the objectives. Unless otherwise indicated, water quality objectives cited for a general area, such as for the southern Delta, are applicable for all locations in that general area and compliance locations will be used to determine compliance with the cited objectives." What constitutes "in that general area" is not defined in the Plan.

The two nearest Bay Delta Plan compliance points are the San Joaquin River at Brandt Road Bridge, south of the discharge point along the San Joaquin River,

and the San Joaquin River at Prisoner's Point, toward San Francisco Bay from the discharge point. Stockton's discharge is located between these two compliance points. The San Joaquin River at Brandt Bridge and at the discharge point is largely unchanged. The River flows in a relatively shallow, winding channel, and there are not major diversions or tributaries to the River between Brandt Bridge and Stockton. The Brandt Bridge compliance point is established to protect agricultural irrigation uses, and seasonally varies from 700 to 1000 $\mu\text{mhos/cm}$. The primary use of River Water at both locations is agricultural irrigation. In contrast, the Prisoner's Point compliance point is located along the Stockton Deep Water Ship Channel where the San Joaquin River has been deepened and straightened. At Prisoner's Point there is seasonally a significant flow of Sacramento River water moving cross-Delta to the pumps near Tracy. The Prisoner's Point compliance point requires the April – May salinity to be maintained at 440 $\mu\text{mhos/cm}$ or less, and is set to protect fish and wildlife beneficial uses. The water quality objectives prescribed for Brandt Road Bridge are judged to be applicable at the site of the Stockton discharge, as being in the "general area" of the compliance point and as having similar River and beneficial use conditions that would make the Brandt Road objective appropriate for beneficial use protection at the discharge point.

Salinity concentrations at the Rough and Ready Island monitoring point indicate that the San Joaquin River sometimes exceeds the Brandt Road water quality objective, so there is no assimilative capacity available in the San Joaquin River. The Stockton effluent discharge also exceeds the salinity concentrations of the Brandt Road objective. Given that there is no assimilative capacity in the river, and the effluent discharge exceeds the objective, there is reasonable potential that the Stockton discharge will cause or contribute to an exceedance of the salinity water quality objective. NPDES regulations require that a final effluent limitation be prescribed when there is reasonable potential to cause or contribute to exceedance of a water quality objective. Since no assimilative capacity is dependably available, the final effluent limit is set at the water quality objective.

The Bay-Delta objectives are under review, but when or if the salinity objectives will be changed is unknown. The Regional Water Board must implement water quality objectives as they exist at this time.

CITY OF STOCKTON COMMENT # 3: The previous Order No. R5-2002-0083 established a mercury-banking program. In reliance on these provisions, the City worked diligently to reduce mercury in its effluent and to establish a mercury-banking program. To preserve the mercury-banking program, the City requests to add the mercury banking provision in the proposed Order.

Request: Change the proposed interim mercury mass limit to:

Mercury. The total annual mass discharge of total mercury shall not exceed 0.92 pounds. This interim performance-based limitation shall be in effect until the Regional Water Board establishes final effluent limitations after adoption of the final

Sacramento-San Joaquin Delta Methylmercury TMDL. Actual mass loading over or under this limitation shall be banked for future offset in accordance with Order R5-2002-0083, and shall not be considered a violation as long as the Discharger has a positive net total in the bank, including consideration of credits banked under Order R5-2002-0083.

Response: Regional Water Board staff disagrees. The mercury banking program in previous Order No. R5-2002-0083 was established to allow the Discharger to comply with the terms of that Order, to allow for growth, and to do so in a way that effectively removes the mercury from the watershed. The mercury banking provision allowed the accumulation of the difference between the interim mass limit (0.92 lbs/year) and the mercury mass discharges below that limit, and allowed the accumulative total (banked mercury loadings) to be used to offset mercury loads above the interim mass limit. At the time the interim mass limit was established, there was relatively little mercury monitoring data to evaluate whether the Discharger could comply with the mass limit over the long term. Based on 67 analytical monitoring results for total mercury collected by the Discharger from 22 May 2002 through 10 January 2007, the maximum running average annual mass discharge of total mercury was only 0.6 lbs/year, and thus, demonstrate that the Discharger can easily meet the mercury interim limit. Therefore, the mercury banking provisions are not necessary. Clarifying language has been added to the Fact Sheet of the proposed Order.

CITY OF STOCKTON COMMENT # 4: The City is concerned that the Reclamation Specifications language in section IV.C of the proposed Order may inadvertently restrict the City's ability to use treated wastewater for a variety of on-site uses. The City further contends that the restriction of on-site uses here is inappropriate and inconsistent with the provisions of Title 22 of the California Code of Regulations.

Request: Change section IV.C.1 of the proposed Order.

Response: Regional Water Board staff agrees with the Discharger and has modified the proposed Order as shown below. ~~Strikethroughs~~ indicate deletions, and underlines indicate insertions.

“Offsite use of reclaimed water covered by this Order shall be limited to dust control, and compaction by building contractors, and street sweeping, ~~and limited on-site landscape irrigation.~~ Additional offsite specific reclamation uses may be approved by the Executive Officer with the submission of a written report demonstrating, to the satisfaction of the Executive Officer, that the uses will be in compliance with the terms of this Order.”

In addition, the phrase “or employee” was deleted from section IV.C.5.g of the proposed Order.

CITY OF STOCKTON COMMENT # 5: The City disagrees with the Salinity Reduction Goal of source water plus an increment of 500 µmhos/cm, and contends that this increment-based goal is unrealistic and not reflective of actual consumptive uses because it does not consider industrial and commercial sources as well as water softeners.

Request: Remove the reference to an increment of 500 µmhos/cm over source water.

Response: The water supply EC plus an increment of 500 µmhos/cm is a typical increment in municipal wastewater. This increment is a reasonable goal and will be used as a basis for evaluating whether the Discharger has made reasonable progress in the reduction of salinity in the discharge. It is not an effluent limitation, it is only a goal. No change will be made to the proposed Order.

CITY OF STOCKTON COMMENT # 6: The City contends that the proposed Order should not contain the newly imposed pond freeboard requirement since the Division of Dam Safety with the Department of Water Resources regulates the City's ponds.

Request: Delete the mandatory requirement to maintain two-feet of freeboard in the ponds at all times.

Response: The Division of Dam Safety's concurrent jurisdiction over potential pond flooding does not remove the Water Board's jurisdiction to protect water quality. The freeboard requirements do not conflict with requirements of the Division of Dam Safety. If the requirements are different, the City must comply with the more stringent requirement in order to comply with all applicable laws. However, staff agrees with the Discharger that the freeboard requirement could be modified to allow flexibility in operation of the Facility. Therefore, the proposed Order has been modified to include a 2 foot freeboard requirement as a monthly average with a requirement that the freeboard be no less than 1 foot at anytime.

CITY OF STOCKTON COMMENT # 7: The City is concerned that the Daily Discharge definition in Attachment A of the proposed Order may inadvertently complicate the calculations for loading rates. The City's discharge days are from 8 am to 8 am. Since most of the discharge occurs during the date started (e.g. 8 am to 12 am of that day), the City requests to date its samples as well as all other parameters, including daily flows, for the date started; instead of the date ended.

Request: Change the language 'ends' to 'begins' in the Daily Discharge definition

Response: Regional Water Board staff agrees with the Discharger and has modified Attachment A to the proposed Order as shown below. ~~Strikethroughs~~ indicate deletions, and underlines indicate insertions.

“Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ~~ends~~ begins.”

CITY OF STOCKTON COMMENT # 8: The City does not currently monitor for SO₂ and Na HSO₃, and is concerned with the imposition and implication of these monitoring requirements in the proposed Order. The City contends that monitoring for these constituents is not necessary to determine permit compliance, or to gather appropriate information regarding ambient water quality, and therefore, the City considers these monitoring requirements to be unnecessary, and inconsistent with state law and policy.

Request: Remove monitoring requirements for SO₂ and Na HSO₃

Response: Regional Water Board staff disagrees. The Facility discharges to the San Joaquin River just upstream of the Stockton Deep Water Ship Channel, which is 303(d) listed for dissolved oxygen. SO₂ and Na HSO₃ are oxygen depleting substances, and excessive use may adversely impact aquatic life and further degrade this section of the San Joaquin River, specifically with regard to the dissolved oxygen concentration. During State and Regional Water Board staffs’ inspection of the Facility on 4-6 September 2007, staff found that “excess sulfur dioxide feedrates ranging from 32% to greater than 500% have been used to dechlorinate effluent at the plant.” (29 January 2008 Stockton Regional Wastewater Control Facility Inspection Report) The Basin Plan contains a narrative water quality objective requiring that: “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” The Facility’s operational procedures indicate that concentrations of SO₂ and Na HSO₃ may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above the Basin Plan’s narrative water quality objective for toxicity. Therefore, monitoring of these constituents in the effluent discharge is necessary to ensure protection of aquatic life and the water quality of the San Joaquin River.

The Discharger currently does not have continuous meters to measure dechlorinating agents. However, the Discharger is in the planning process for the construction of ultraviolet light disinfection, which would negate the need for the use of chlorine and dechlorinating agents. Therefore, the need for continuous meter to monitor dechlorinating agents is an unnecessary requirement. The proposed Order has been modified to require daily grab samples of dechlorinating agents.

CITY OF STOCKTON COMMENT # 9: The City's existing in-house methodology currently supports a reporting limit of 0.5 mg/L for ammonia; therefore, the City requests to change the method detection limit for ammonia of 0.1 mg/l to a reporting limit of 0.5 mg/L until such time that the in-house laboratory that an alternative in-house method can be implemented to achieve a reporting limit of 0.1 mg/L or lower.

Response: Regional Water Board staff agrees with the Discharger in regard to monitoring for ammonia in the effluent since a reporting limit of 0.5 mg/L is sufficient to determine compliance with the effluent limitations for ammonia in the proposed Order (i.e. AMEL of 2 mg/L and MDEL of 5 mg/L). However, Regional Water Board staff disagrees with the Discharger in regard to this same level of analysis for ammonia in the receiving water. There has been recent research by Dr. Richard Dugdale, a researcher at San Francisco State University, demonstrating that ammonia can inhibit growth of marine diatoms at ammonia concentrations in the receiving water much lower than ammonia concentrations that impact fish species. Studies are in progress examining possible impacts of ammonia on growth of fresh water diatoms that exist in the Delta in the vicinity of this discharge. The Delta has a relative low primary productivity for an estuarine environment. If ammonia inhibition of fresh water diatoms does occur, it is possible that lowered primary productivity from diatom inhibition could be a contributing factor to Delta pelagic organism decline. Studies are ongoing to evaluate the effect of ammonia on the inhibition of growth of freshwater diatoms in the Delta, as well as, studies to evaluate the sensitivity of delta smelt to ammonia toxicity. Due to the low levels of ammonia evaluated in these studies, a method detection level of 0.1 mg/L is necessary to evaluate and ensure protection of aquatic life and the water quality of the San Joaquin River; a method detection level of 0.5 mg/L is not adequate. The Monitoring and Reporting Program of the proposed Order has been modified to allow analysis of ammonia concentrations in the effluent at or below a reporting limit of 0.5 mg/L; no change will be made to the monitoring requirements for ammonia in the receiving water.

CITY OF STOCKTON COMMENT # 10: The City requests to change the monitoring requirement for cyanide from 24-composite to grab samples to be consistent with the alternative analysis allowed in the proposed Order (e.g. footnote 10 to Table E-3 of the Monitoring and Reporting Program)

Request: Change 'Sample Type' for cyanide to 'Grab'

Response: Regional Water Board staff agrees with the Discharger and have modified Table E-3 on page E-3 of the Monitoring and Reporting Program in the proposed Order to require a grab sample for effluent cyanide.

CITY OF STOCKTON COMMENT # 11: The City contends that weekly monitoring is unnecessary considering the City's results from previous acute toxicity testing.

Request: Reduce acute toxicity monitoring from "weekly" to "monthly" monitoring.

Response: Regional Water Board staff disagrees. Weekly acute toxicity testing is appropriate and necessary to protect the aquatic life beneficial use of the receiving water. No change will be made to the proposed Order.

CITY OF STOCKTON COMMENT # 12: The City contends that since previous evaluations of WET bioassay results indicated that at times the San Joaquin River is toxic to *Selenastrum capricornutum*, the City requests to use laboratory control water.

Request: Use laboratory control water in chronic testing for *Selenastrum capricornutum*.

Response: Regional Water Board staff agrees with the Discharger and has modified section V.B.7 on page E-6, and Table E-4, of the Monitoring and Reporting Program in the proposed Order accordingly.

CITY OF STOCKTON COMMENT # 13: The City contends that the Fact Sheet provides no explanation or evidence as to why the additional pond monitoring and secondary effluent monitoring requirements have been added to Monitoring and Report Program in the proposed Order.

Response: The proposed Order has been modified with the following language added to section VI.E.4 of the Fact Sheet.

"Monitoring of Secondary Effluent and Facultative Ponds

Monitoring of the secondary effluent and the wastewater in the facultative ponds are necessary to assess the impacts of the percolate to groundwater. Secondary effluent and pond monitoring are new requirements in this Order because the localized background groundwater conditions have not been determined, which is necessary to ensure compliance with the Groundwater Limitations V.B in the Limitations and Discharge Requirements section of this Order. For additional information see sections V.B. and VII.B.2.c. of this Fact Sheet."

CITY OF STOCKTON COMMENT # 14: The City contends that the proposed Order requires semi-annual sampling to be conducted in January and July based on Table

E-12 in the Monitoring and Reporting Program (MRP), and therefore, requests to conduct groundwater sampling in late March and early October instead.

Response: The premise for this comment is incorrect. Table E-12. Monitoring Periods Report Schedule does not specify when sampling should be conducted, but does specify the reporting due date for submittal of the monitoring results obtained during specific monitoring frequencies (e.g. 1/month, 2/year, etc.). However, Table E-7. Groundwater Monitoring Requirements specifies that groundwater monitoring must be conducted either 1/quarter or 2/year, depending upon the well location, but does not require a specific month that the sampling must be conducted. The proposed Order allows the Discharger to determine site-specific conditions, and personnel availability and safety, in conducting groundwater sampling. No change will be made to the proposed Order.

CITY OF STOCKTON COMMENT # 15: The City recommends minor modifications to section IX.A. Biosolids in the Monitoring and Reporting Program of the proposed Order for clarification.

Response: Regional Water Board staff agrees with the Discharger's request and has modified section IX.A.1. on page E-11 of the Monitoring and Reporting Program in the proposed Order as shown below. ~~Strikethroughs~~ indicate deletions, and underlines indicate insertions.

"b. A composite sample of sludge shall be collected when sludge is removed from the ~~lagoon~~ facility for disposal in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22," and

"d. ~~Upon removal of sludge, t~~The Discharger shall monitor twice per year and submit characterization of the sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols)."

CITY OF STOCKTON COMMENT # 16: The City recommends that the discussion relative specifically to copper and the hardness value used in calculating the criteria be corrected in the Fact Sheet of the proposed Order to ensure consistency throughout.

Response: Regional Water Board staff agrees. Section IV.C.3.I. Copper, Total Recoverable, page F-29 in the Fact Sheet of the proposed Order, has been modified as shown below. ~~Strikethroughs~~ indicate deletions, and underlines indicate insertions.

"Using the reasonable worst-case ambient measured ~~design~~hardness from ~~the receiving water~~, estimated here as the lowest effluent hardness (980 mg/L as CaCO₃), and the USEPA recommended dissolved-to-total translator, the

applicable chronic criterion (maximum 4-day average concentration) is ~~8.539.2~~ 8.539.2 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is ~~12.7414~~ 12.7414 µg/L, as total recoverable.”

CVCWA COMMENTS

CVCWA COMMENT # 1: In general, CVCWA is concerned with the imposition of excessive monitoring requirements [with regards to SO₂ and Na HSO₃] when there is no regulatory, or water quality based justification. The commenter further contends that the proposed monitoring requirements for SO₂ and Na HSO₃ in the Tentative Order appear to be in direct conflict with their agreement with the State Water Board for the imposed monitoring surcharge on NPDES permit holders to fund the Surface Water Ambient Monitoring Program.

Response: See response to City of Stockton Comment # 8.

CVCWA COMMENT # 2: CVCWA suggests that the proposed Order contains inconsistencies in the language, and therefore recommends that the Fact Sheet be corrected to ensure consistency throughout. In particular, CVCWA is concerned with the hardness discussion relative specifically to copper in the Fact Sheet of the proposed Order.

Response: See response to City of Stockton Comment # 16.

CSPA COMMENTS, 7 September 2008

CSPA COMMENT # 1: The Proposed Permit does not contain effluent limitations for Chronic Toxicity and therefore fails to comply with federal regulations at 40 CFR 122.44 (d)(1)(I) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP).

Response: This was an issue addressed in State Water Resources Control Board's Water Quality Order for the City of Davis (WQO 2008-0008) adopted on 2 September 2008. With regard to the need for a numeric chronic toxicity effluent limit, WQO 2008-0008 states, "We have already addressed this issue in a prior order and, once again, we conclude that a numeric effluent limitation for chronic toxicity is not appropriate at this time." However, the Order goes on to state, "Our review of the Permit, however, concludes that it does not include an appropriate narrative effluent limitation for chronic toxicity and that one must be added." Based on this recent Water Quality Order, the proposed Order has been modified to include the following narrative chronic toxicity effluent limitation in section IV.A.1.k, and the following compliance determination language in section VII.H:

Section IV.A.1.k

"k. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge."

Section VII.H.

"H. **Chronic Whole Effluent Toxicity Effluent Limitation.** Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitation IV.A.1.k for chronic whole effluent toxicity."

The commenter also contends that the Chronic Toxicity Testing Dilution Series [in the proposed Order] should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge. Regional Water Board staff disagrees. The proposed Order does not allow a dilution credit for chronic aquatic life criteria. Thus, the dilution series is appropriate and relevant to the discharge.

CSPA COMMENT # 2: The Proposed Permit also contains an acute toxicity discharge limitation that allows 30% mortality, thereby granting a mixing zone absent any required analysis.

Response: The acute whole effluent toxicity limits establish thresholds to control acute toxicity in the effluent: survival in one test no less than 70% and a median of no less than 90% survival in three consecutive tests. Some in-test mortality

can occur by chance. To account for this, the acute toxicity test acceptability criteria allow ten percent mortality (requires 90% survival) in the control. Thus, the acute toxicity limits allow for some test variability, but impose ceilings for exceptional events (i.e., 30% mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10%). These effluent limitations are consistent with USEPA guidance. In its document titled "Guidance for NPDES Permit Issuance," dated February 1994, it states the following:

"In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median.

The appropriateness of the acute toxicity effluent limitations was also addressed in State Water Board WQO 2008-0008 for the City of Davis. In WQO 2008-0008, the State Water Board concurred with the Regional Water Board's implementation of the acute toxicity effluent limitations.

CSPA COMMENT # 3: The Proposed Permit does not meet the requirements for an exemption from California Code of Regulations (CCR) Title 27. CSPA further contends that the Basin Plan groundwater objectives do not require improvement over naturally occurring background concentrations.

Response: Regional Water Board staff disagrees. First, the discharges of domestic sewage or treated effluent are exempt from Title 27 under section 20090(a). The facultative ponds and wetlands are part of the wastewater treatment facility and are explicitly exempt from Title 27 under section 20090(a). Second, the Basin Plan on page II-9-00 states "These objectives [Bacteria, Chemical Constituents, Radioactivity, Tastes and Odors, and Toxicity] do not require improvement over naturally occurring background concentrations." As discussed further in response to CSPA Comment #4, the proposed Order contains several mechanisms to determine whether the treated wastewater is threatening to cause or has caused groundwater to contain waste constituents in concentrations greater than background water quality, and thus ensure that Best Practicable Treatment or Control are in place to protect the Beneficial Uses of the groundwater.

CSPA COMMENT # 4: [The proposed Order] does not meet the requirements of the Board's Antidegradation Policy. CSPA further contends that the treated wastewater stored in the unlined ponds and further treated in the Facility's wetlands has degraded groundwater, and that "[i]t is not necessary to determine unaffected background water quality to show degradation from the discharge."

Response: The premise for this comment is incorrect; it is not known whether the secondary-level treated wastewater stored in the unlined ponds has

degraded the underlying groundwater. The Basin Plan stipulates that when the background condition(s) is less stringent than the numeric water quality objective, the background condition becomes the numeric water quality objective. As documented in the proposed Order, “background groundwater conditions are those pollutants that are present in the groundwater that are not attributable to the Facility’s activities. Rather, these conditions are outside the influence of the Facility, and may be caused by local geophysical, hydrological, and meteorological process, and wildlife and outside anthropogenic activities. . . [California’s Groundwater, Bulletin 118, 20 January 2006, states ‘[i]n general, areas of poor water quality with high salinity exist throughout the Delta subbasin. . . TDS values range from 210 to 7800 mg/L and average about 1190 mg/L. Areas of elevated chloride and nitrate occur in several areas within the subbasin.’” The Discharger’s groundwater monitoring analysis resulted in a maximum TDS value of 1730 mg/L, which is well below the regional maximum value of 7800 mg/L. Therefore additional localized background groundwater quality data are needed to establish the most appropriate groundwater limits, and reasonable time is necessary to gather specific information about the Facility to make informed, appropriate, long-term decisions.

Regional Water Board staff agrees that the ponds, as currently operated, may pose a threat to water quality, and that the Discharger must ensure it meets best practicable treatment or control (BPTC) of the discharge, which may result in the lining of the ponds. Therefore, the proposed Order requires the Discharger to complete a background groundwater quality and groundwater degradation assessment study. If the groundwater monitoring results show that the discharge of waste is threatening to cause or has caused groundwater to contain waste constituents in concentrations greater than background water quality, the Discharger must submit a BPTC Evaluation Workplan that sets forth a scope and schedule for a systematic and comprehensive technical evaluation of each component of the Facility’s waste management system to determine BPTC for each waste constituent of concern.

The proposed Order contains additional mechanisms to ensure that the treated wastewater does not cause or threaten to cause groundwater to contain waste constituents in concentrations greater than background water quality. The proposed Order requires monitoring of the secondary effluent transported to the facultative ponds to measure concentrations of certain constituents contained in the treated domestic wastewater, and requires monitoring of the pond water to determine whether degradation of the groundwater for certain constituents from percolation of the treated domestic wastewater stored in the unlined facultative ponds and further treated in the wetlands is consistent with maximum benefit to the people of California, and thus, complies with the Antidegradation Policy.

CSPA COMMENT # 5: [The proposed Order] [d]oes not contain discharge limitations that prevent groundwater degradation or pollution in violation of California Water Code Section 13377. CSPA further contends that “[t]here currently are no effective limitations

in the proposed Permit protective of groundwater quality. . . Failure to include effective limitations for the protection of groundwater quality violates the requirements of CWC 13377.”

Response: Section 13377 regulates point source discharges only, and does not prohibit groundwater degradation or pollution. Regional Water Board staff disagrees that the proposed Permit does not require compliance with antidegradation or pollution prevention requirements of state law; section V.B.1.a. in the proposed Order contains the following groundwater limitation:

“1. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not cause or contribute to, in combination with other sources of the waste constituents, groundwater within influence of the Facility to contain:

- a. Taste or odor-producing constituents, toxic substances, or any other constituents, in concentrations that cause nuisance or adversely affect beneficial uses;”

These groundwater limitations are consistent with numerous waste discharge requirements issued by the Regional Water Board, and protect the beneficial uses of the groundwater.

CSPA COMMENT # 6: The proposed Permit does not contain an Effluent Limitation for oil and grease in violation of Federal Regulations 40 CFR 122.44 and California Water Code, Section 13377. The proposed Permit contains Effluent Limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (I)(1).

Response: Based on information included in self-monitoring reports submitted by the Discharger, the effluent oil and grease was non-detectable (<5.0 mg/L) in all 52 samples obtained in 2007. Therefore, the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative objectives for oil and grease and floating material. The previous permit, Order R5-2002-0083, included monthly average and daily maximum effluent limitations for oil and grease of 10 mg/L and 15 mg/L, respectively. The proposed Order removes the effluent limitations for oil and grease based on new information consistent with anti-backsliding requirements of 40 CFR 122.44(I)(2)(i)(B)(1).

The proposed Order is adequately protective. It contains a narrative receiving water limitations for oil and grease and floating materials, and requires weekly effluent monitoring for oil and grease.

CSPA COMMENT # 7: The proposed Permit incorrectly established the technology based CBOD limitations for tertiary treatment.

Response: Regional Water Board staff disagrees; Total Suspended Solids (TSS) and 5-day biochemical oxygen demand (BOD₅) or carbonaceous 5-day biochemical oxygen demand (CBOD₅) are indicators of the effectiveness of the treatment processes. Regulations require technology-based effluent limitations for municipal discharges to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards. The proposed Order contains more stringent limits based on the technical capability of the tertiary process. Previous Order No. R5-2002-0083 set seasonal CBOD₅ limitations of: 20 mg/l, 30 mg/l and 50 mg/l, from 1 December through 31 March; 10 mg/l, 20 mg/l and 25 mg/l from 1 April through 31 October; and, 15 mg/l, 23 mg/l, and 30 mg/l from 1 November through 30 November as a monthly average, weekly average and daily maximum, respectively. The proposed Order sets year-round limitations of 10 mg/l, 15 mg/L, and 20 mg/L, as a monthly average, weekly average and daily maximum, respectively. These new limitations are more stringent than those in the previous Order.

CSPA contends that “[s]ince the City of Stockton only partially nitrifies large errors could occur in the CBOD tests” and therefore, the CBOD₅ monthly average limitation of 10 mg/L is overly generous and should be reduced to 8 mg/L “to achieve applicable water quality standards [dissolved oxygen] and to achieve compliance in WQLSs.” Regional Water Board staff disagrees. Since the Discharger added nitrification facilities, which include nitrifying biotowers and engineered wetlands, analytical results indicate that the Facility fully nitrifies (72 samples obtained from September 2006 through January 2008 resulted in 55 samples at <0.5 mg/L, and a maximum concentration of 4.0 mg/L ammonia as N). Furthermore, the proposed Order contains water quality based effluent limitations for dissolved oxygen, ammonia, and nitrate plus nitrite; compliance with these water quality based effluent limitations are expected to achieve applicable water quality standards and protect aquatic life. Reducing the CBOD₅ monthly average technology based effluent limit from 10 mg/L to 8 mg/L, as the commenter suggests, will have minimal effect on the receiving water and is unwarranted.

CSPA COMMENT # 8: The proposed Permit does not contain a protective effluent limitation for ammonia in violation of Federal Regulations 40 CFR 122.44 and California Water Code Section 13377. The proposed Permit contains effluent limitations for ammonia as a daily maximum and as an average monthly. There is no four day average limit for ammonia. US EPA’s *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life 1999 update for Ammonia* EPA-822-R-99-014 recommends that “the highest four-day average within the 30 day period should not exceed 2.5 times the CCC” (the chronic criterion).

Response: Regional Water Board staff disagrees. For ammonia, the proposed Order contains a maximum daily effluent limitation (MDEL) of 5 mg/L and an average monthly effluent limitation (AMEL) of 2 mg/L, which were carried forward

from previous Order No. R5-2002-0083. Using the calculations recommend in US EPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life 1999 update for Ammonia* EPA-822-R-99-014, the corresponding 30-day CCC (chronic criterion) is 2.13 mg/L. As the commenter stated, US EPA also recommends that the 4-day average CCC ammonia concentration shall not exceed 2.5 times the value of the 30-day CCC. The resulting 4-day average CCC is $2.5 \times 2.13 = 5.3$ mg/L. Considering the MDEL is less than the 4-day average CCC, the 4-day average CCC will not be exceeded if the Discharger is in compliance with the proposed permit.

CSPA COMMENT # 9: The proposed Permit fails to contain mass-based effluent limits for bis(2-ethylhexyl)phthalate, chlorodibromomethane, dichlorobromomethane, cyanide, manganese, molybdenum and nitrate plus nitrite as required by Federal Regulations 40 CFR 122.45(b).

Response: 40 CFR SEC 122.25(f) states the following:

“Mass limitations. (1) All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:

- (i) For pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass;*
 - (ii) When applicable standards and limitations are expressed in terms of other units of measurement; or*
 - (iii) If in establishing permit limitations on a case-by-case basis under §125.3, limitations expressed in terms of mass are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation (for example, discharges of TSS from certain mining operations), and permit conditions ensure that dilution will not be used as a substitute for treatment.*
- (2) Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.”*

40 CFR section 122.25(f)(1)(ii) states that mass limitations are not required when applicable standards are expressed in terms of other units of measurement. The numerical effluent limitations for bis(2-ethylhexyl)phthalate, chlorodibromomethane, dichlorobromomethane, cyanide, manganese, molybdenum and nitrate plus nitrite in the proposed Order are based on water quality standards and objectives. These are expressed in terms of concentration. Pursuant to 40 CFR section 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is expressly allowed and is in no way contrary to Federal Regulations.

CSPA COMMENT # 10: The proposed Permit contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, federal regulations 40 CFR § 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247.

Response: Regional Water Board staff disagrees; Water Codes Section 13146 and 13247 require other state agencies to comply with water quality control plans when those agencies are discharging waste. Although these sections are not relevant here, Regional Water Board staff concurs that the Regional Water Board must comply with state and federal antidegradation policies when issuing NPDES permits. However, the Permit complies with those policies.

The Permit is for an existing discharge with no increase in capacity or permitted flow. State Water Board and US EPA guidelines do not require a new antidegradation analysis. (Memo to the Regional Board Executive Officers from William Attwater (10/7/87), p.5; APU 90-004, pp. 2-3; *EPA Water Quality Handbook 2d*, § 4.5.) Nevertheless, the Fact Sheet within the proposed Order evaluates pollutant by pollutant the impact to waters of the state and demonstrates that such discharges will not unreasonably degrade the waters of the state. No antidegradation analysis is required when the Regional Water Board reasonably concludes that degradation will not occur. (Attwater memo p. 3.)

CSPA COMMENT # 11: CSPA contends that the proposed Order "does not address the Antidegradation Policy requirements with regard to" the CBOD₅, nitrate plus nitrite, toxicity, and groundwater limitations.

Response:
CBOD₅. See Response to CSPA Comment #7.

Nitrate plus Nitrite. A dilution credit of up to 13:1 is allowed because there is assimilative capacity in the receiving water for nitrate plus nitrite (maximum observed upstream receiving water nitrate and nitrite concentration was 4.2 mg/L and 0.1 mg/L respectively), and as a result, an average monthly effluent limitation of 113 mg/L may be imposed. Water quality standards, such as the drinking water MCL of 10 mg/L, are not required to be met within mixing zones, and an antidegradation analysis is not required for areas within a mixing zone, as long as the requirements of the mixing zone policy are met. (*American Wildlands v. Browner* (10th Cir. 2001) 260 F.3d 1192, 1195-1196, 1198.) The Fact Sheet within the proposed Order includes explicit findings that the mixing zone meets the applicable requirements. However, allocating the full assimilative capacity in the receiving water for nitrate plus nitrite, that is setting an average monthly effluent limit for nitrate plus nitrate at 113 mg/L is not consistent with the Antidegradation Policy, because the Discharger can meet a more stringent performance-based effluent limitation. Therefore, the proposed Order sets the

newly imposed nitrate plus nitrite limitation at 40 mg/L; previous Order No. R5-2002-0083 does not contain effluent limitations for nitrate nor nitrite.

Toxicity. See Response to CSPA Comments #1 and #2.

Groundwater. See Response to CSPA Comments #3 - #5.

CSPA COMMENT # 12: The proposed Permit fails to contain a protective Effluent Limitation for Electrical Conductivity (EC) as required by 40 CFR 122.44 (d)(i).

Response: Regional Water Board staff disagrees; the proposed Order contains several mechanisms to control and reduce salinity in the effluent discharge and thus protect beneficial uses. The proposed Order contains numeric performance based effluent limitation for electrical conductivity (EC) of 1300 $\mu\text{mhos/cm}$ to protect the receiving water from further salinity degradation, and requires the Discharger to implement salinity reduction measures to reduce the salinity in its discharge. In summarizing Provision VI.C.3.c, the proposed Order requires the Discharger to take reasonable steps to obtain lower salinity water supply sources, develop and implement measures to reduce salinity in the discharge, and to participate financially in the development of the Central Valley Salinity Management Plan. Moreover, Provision VI.C.3.b of the proposed Order sets a Salinity Reduction Goal of the maximum weighted average EC of the City of Stockton's water supply (i.e. 273 $\mu\text{mhos/cm}$ in March 2005), plus an increment of 500 $\mu\text{mhos/cm}$. Compliance with the proposed Order's requirements will likely result in a salinity reduction in the effluent discharged to the receiving water, and should ultimately achieve the intermediate goal (i.e. goal of 773 $\mu\text{mhos/cm}$).

In addition, the proposed Order contains a safe guard such that seasonal limits at "a monthly average of 700 $\mu\text{mhos/cm}$ (1 April to 31 August), and 1000 $\mu\text{mhos/cm}$ (1 September to 31 March)" are effective immediately if "the Regional Water Board finds that the Discharger has materially failed to comply with the approved Salinity [reduction] Plan due to circumstances within its control."

The State Water Board approved this approach to Delta salinity control in Order WQ 2005-0005 (City of Manteca).

CSPA COMMENT # 13: Effluent Limitations for specific conductivity (EC) is improperly regulated as an annual average contrary to Federal Regulations 40 CFR 122.45 (d)(2) and common sense.

Response: Regional Water Board staff disagrees. The proposed Order includes annual average performance-based effluent limitations for EC to keep the discharge from exceeding current levels. The averaging period is appropriate due to short-term fluctuations that can occur in the Discharger's effluent caused by changes in its water supply EC. Multiple sources of supply water are used depending upon season and availability. In the City of Stockton's case,

approximately 40% of the water supply comes from groundwater, and during the term of the proposed Order (if adopted), the City intends to obtain a new surface water supply source to augment its current water supply system and minimize the use of groundwater. Consequently, it is impracticable to calculate performance-based effluent limitations for EC on a shorter averaging period.

CSPA COMMENT # 14: The proposed Permit contains [turbidity] Effluent Limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1). . . Turbidity limitations are maintained in the proposed Permit but have been moved to Section 5f Special Provisions, page 30, they are no longer Effluent Limitations. . . Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. There are no limitations for viruses and parasites in the proposed Permit, which the Regional Board has indicated, are necessary to protect the contact recreation and irrigated agricultural uses of the receiving water. Both coliform and turbidity limitations are treatment effectiveness indicators that the levels of bacteria viruses and parasites are adequately removed to protect the beneficial uses.

Response: Regional Water Board staff disagrees. As stated in the Fact Sheet, turbidity testing is a quick way to determine the effectiveness of the treatment filter performance, and to signal the Discharger to implement operational procedures to correct deficiencies in the filter performance. Yet, higher effluent turbidity measurements do not necessarily indicate that the effluent discharge exceeds the water quality criteria/objectives for pathogens (i.e. bacteria, parasites, and viruses), which are the principal infectious agents that may be present in raw sewage. Therefore, operational requirements for turbidity are appropriately included as a Provision in the proposed Order rather than effluent limitations. On the other hand, total coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing pathogens. Therefore, effluent limitations for total coliform organisms are necessary and have been included in the proposed Order. The previous Order included effluent limitations for turbidity. The operational turbidity requirements in the proposed Order are an equivalent limitation that is not less stringent than the turbidity effluent limitations required in the previous Order No. R5-2002-0083. Therefore, the removal of the turbidity effluent limitations does not constitute backsliding.

CSPA COMMENT # 15: The proposed Permit contains effluent limitations less stringent than the existing permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (l)(1) [mass-based effluent limitations for bis(2-ethylhexyl)phthalate, chlorodibromomethane, dichlorobromomethane and cyanide.]

Response: Response to CPSA Comment # 9 addresses the need for mass limitations. As stated in response to CPSA Comment #9, the mass limitations are not necessary to protect the beneficial uses of the receiving water and are not required by Federal Regulations. Although the mass limitations for bis(2-ethylhexyl)phthalate, chlorodibromomethane, dichlorobromomethane and cyanide have been removed in the proposed Order, this does not constitute backsliding, because; (1) the proposed Order includes more stringent concentration-based effluent limitations for these constituents, and (2) the design flow has not increased, which is the basis for calculating mass-based effluent limitations. Compliance with the concentration-based limits will ensure that significantly less mass of the pollutants is discharged to the receiving water.

CSPA COMMENT # 16: The proposed Permit establishes effluent limitations for metals based on the hardness of the effluent as opposed to the ambient upstream receiving water hardness as required by federal regulations; the California Toxics Rule (CTR, 40 CFR 131.38(c)(4))

Response: The proposed Order has established the criteria for hardness-dependent metals based on the reasonable worst-case estimated ambient hardness as required by the SIP, the CTR and Order No. WQO 2008-0008 (City of Davis). Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The SIP does not address how to determine hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones. The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. The Regional Water Board thus has considerable discretion in determining ambient hardness. (Order WQ 2008-0008 (City of Davis), p.10.) The City of Davis order allows the use of "downstream receiving water mixed hardness data" where reliable, representative data are available. (Id., p. 11.)

The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals

criteria. Recent studies¹ indicate that using the receiving water lowest hardness for establishing water quality criteria is not the most protective for the receiving water (e.g. when the effluent hardness is less than the receiving water hardness). The studies evaluated the relationships between hardness and the CTR metals criterion that is calculated using the CTR metals equation. The Regional Water Board has evaluated these studies and concurs that for some parameters the ambient hardness can be estimated using the lowest hardness value of the effluent, while for some parameters, the use of both the lowest (or highest) hardness value of the receiving water and the lowest hardness value of the effluent best estimates the ambient conditions. This approach was used to establish water quality-based effluent limitations for hardness-dependent metals in the proposed Order and is adequately protective of the beneficial uses.

CSPA COMMENT # 17: The proposed Permit either improperly dedesignates a reach of the receiving stream for beneficial uses or grants a mixing zone without a mixing zone analysis contrary to the SIP and the Basin Plan. CSPA further contends that the proposed Effluent Limitations in the proposed Permit are not supported by the scientific investigation, that not a single item required by the Basin Plan and the SIP [i.e. section 1.4.2.2] is addressed, and that the “edge of the mixing zone” has not been defined.

Response: Regional Water Board staff disagrees. The proposed Order grants a 13:1 dilution credit for human health criteria and where water quality criteria are based on agricultural water quality objectives. As defined in the Fact Sheet of the proposed Order, the expanse of the mixing zone is “approximately 3.5 miles upstream and 1 mile downstream of the discharge.” The mixing zone and dilution credits are in compliance with the SIP and the Basin Plan, follows USEPA’s TSD guidance, and is adequately protective of the beneficial uses of the receiving water.

USEPA’s current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR §122.44 and §122.45). The USEPA allows states to have broad flexibility in designing their mixing zone policies. Primary guidance on determining mixing zone and dilution credits is provided by the SIP, the USEPA Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA/505/2-90-001), and the Basin Plan. For NPDES permits in California, the SIP guidance supercedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. However, for non-priority pollutants, the more stringent of the Basin Plan or US EPA guidance may apply.

Previous Order No. R5-2002-0083 granted a mixing zone and dilution credit of 10:1. In determining the available receiving water dilution for compliance with human carcinogen criteria, the SIP, Section 1.4.2.1 requires that the harmonic mean of the receiving water flow be compared against the arithmetic mean of the

¹ “Developing Protective Hardness-Based Metal Effluent Limitations”, Robert W. Emerick, Ph.D., P.E. and John E. Pedri, P.E.

effluent flow of the observed discharge period. However, until the placement of the UVM at Stockton in late 1995, direct SJR flow measurements had not existed. Therefore, the dilution credit was calculated using a harmonic mean of 848 cfs using the available UVM net flow data (August 1995 through September 2001) mgd or 41.8 cfs, and the permitted flow, or the current tertiary design flow of 55 mgd or 85 cfs. The previous Order No. R5-2002-0083 required the Discharger to perform a hydraulic analysis of the effluent discharge into the SJR, performed over a variety of flow conditions, to delineate the extent of the corresponding human carcinogen priority pollutant mixing zone. The previous Order also required the Discharger to evaluate the relative carcinogenic risk of the combined discharge of multiple human carcinogens from the Facility into the San Joaquin River.

In May 2005, Jones & Stokes prepared for the Discharger the report entitled the "Evaluation of San Joaquin River Tidal Flow Dilution at the Stockton Regional Wastewater Control Facility." And in May 2006, EOA, Inc. prepared for the Discharger the human carcinogenic impact study final report entitled "Stockton Regional Wastewater Control Facility Human Carcinogen Impact Study Phase 2A: Basin Plan Calculation of Additive Toxicity Ratio." In these studies, The Discharger tracked the tidal movement during various tidal stages, estimated the cumulative tidal flow volume that moved past the discharge, analyzed the long-term average dilution flow, and evaluated the upstream flow at Vernalis combined with the diversions in the Old River to estimate the net flows within the vicinity of the discharges. These studies concluded that there is available dilution for human health criteria.

A dilution credit of 13:1 was calculated according to the recommended procedure in the SIP, using the harmonic mean flow of the San Joaquin River of 647 cfs and a long-term arithmetic mean discharge of 48.6 cfs. As a result, a dilution credit for nitrate plus nitrite, manganese, chlorodibromomethane, and dichlorobromomethane of 13:1 was granted in the proposed Order based on the available dilution for human health criteria. However, since based on the performance of the Facility the Discharger can immediately meet more stringent limits for nitrate plus nitrite and manganese, performance-based effluent limitations (mean plus 3.3 standard deviations) are included in the proposed Order for nitrate plus nitrite and manganese, and thus, the proposed Order does not grant the full dilution credit of 13:1 for these constituents.

For constituents where water quality criteria are based on agricultural water quality objectives, critical environmental impacts are expected to occur far downstream from the source such that complete mixing is a valid assumption. Because protection of agricultural beneficial uses is based upon the long-term effects, for molybdenum where water quality criteria are based on agricultural water quality objectives, a dilution credit of up to 13:1 can be granted, based on the San Joaquin River harmonic flow and a long-term arithmetic mean discharge. However, since the Discharger can immediately meet a more stringent limit for

molybdenum, the proposed Order does not grant the full dilution credit of 13:1, and instead, includes a performance-based effluent limitation for molybdenum.

In granting a mixing zone, the SIP states that a mixing zone shall be as small as practicable, and meet the conditions provided in Section 1.4.2.2 as follows:

“A: A mixing zone shall not:

- (1) compromise the integrity of the entire water body;*
- (2) cause acutely toxic conditions to aquatic life passing through the mixing zone;*
- (3) restrict the passage of aquatic life;*
- (4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;*
- (5) produce undesirable or nuisance aquatic life;*
- (6) result in floating debris, oil, or scum;*
- (7) produce objectionable color, odor, taste, or turbidity;*
- (8) cause objectionable bottom deposits;*
- (9) cause nuisance;*
- (10) dominate the receiving water body or overlap a mixing zone from different outfalls; or*
- (11) be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy.”*

Regional Water Board staff has revised the Fact Sheet as follows to include explicit findings that the mixing zone meets each of the applicable requirements.

The proposed Order only allows a mixing zone for human health and agricultural criteria (i.e. long-term criteria). The proposed Order does not allow mixing zones for compliance with aquatic toxicity criteria. The mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the waterbody or overlap existing mixing zones from different outfalls. There are no drinking water intakes within the mixing zone and the mixing zone does not overlap a mixing zone from another outfall.

The discharge will not cause acutely toxic conditions to aquatic life passing through the mixing zone, because the proposed Order does not allow an acute aquatic life mixing zone and requires compliance with an acute toxicity effluent limitation that requires acute bioassays using 100% effluent (i.e. no dilution). Compliance with the acute toxicity effluent limitation assures the effluent is not acutely toxic.

The discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws, because the proposed Order does not allow mixing zones for compliance with aquatic toxicity criteria. The Discharger must meet stringent end-of-pipe effluent limitations for constituents that demonstrated reasonable potential to exceed aquatic toxicity criteria (i.e. ammonia, aluminum, cyanide, total residual chlorine).

The discharge will not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance; because the proposed Order requires end-of-pipe effluent limitations (e.g. for biochemical oxygen demand and total suspended solids) and discharge prohibitions to prevent these conditions from occurring.

As suggested by the SIP, in determining the extent or whether to allow a mixing zone and dilution credit, the Regional Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.

The mixing zone therefore complies with the SIP. The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Regional Water Board has considered the procedures and guidelines in the EPA's Water Quality Standards Handbook, 2d Edition (updated July 2007), Section 5.1, and Section 2.2.2 of the Technical Support Document for Water Quality-based Toxics Control. The SIP incorporates the same guidelines.

CSPA COMMENT # 18: The proposed Permit fails to contain protective effluent limitations for aluminum in accordance with Federal Regulations 40 CFR 122.44, US EPA's interpretation of the regulation, and California Water Code, Section 13377

Response: CSPA argues that the chronic criterion (87 µg/L) recommend by the USEPA Ambient Water Quality Criteria (NAWQC) for Aluminum should be applied for this discharge. Regional Water Board staff disagrees. The chronic criterion is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as CaCO₃), which are conditions not commonly observed in Central Valley receiving waters like the San Joaquin River. Consequently, the criterion is likely overly protective for this application. For similar reasons, the Utah Department of Environmental Quality (Department) only applies the 87 µg/L chronic criterion for aluminum where the pH is less than 7.0 and the hardness is less than 50 mg/L as CaCO₃ in the receiving water after

mixing. For conditions where the pH equals or exceeds 7.0 and the hardness is equal to or exceeds 50 mg/L as CaCO₃, the Department regulates aluminum based on the 750 µg/L acute criterion.

On 12 April 2007, the City of Manteca completed a Phase II aluminum water effects ration (WER) study for the San Joaquin River near its discharge point, which is approximately 11 miles upstream of the City of Stockton. The Manteca Phase II WER study, which may be used to calculate a WER for the City of Manteca's discharge, indicated that a WER of 22.7 can be applied to the chronic criterion for aluminum. Since the characteristics of the river (e.g. hardness and pH) near Manteca are similar to those near the City's discharge, the results of the Manteca WER study put into question the applicability of the stringent chronic criterion recommended by the NAWQC for aluminum. Therefore, based on best professional judgment, using the chronic criterion recommended in the NAWQC (87 µg/L) is not appropriate for the receiving water. For this discharge, only the acute criterion (750 µg/L) was applied in the proposed Order.

CSPA COMMENT # 19: The Proposed Permit contains an inadequate Reasonable Potential Analysis by using incorrect statistical multipliers. Federal regulations, 40 CFR § 122.44(d)(1)(ii), state "when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, **the variability of the pollutant or pollutant parameter in the effluent**, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water." Emphasis added.

The reasonable potential analysis fails to consider the statistical variability of data and laboratory analyses as explicitly required by the federal regulations. The commenter further contends that the fact that the SIP illegally ignores this fundamental requirement does not exempt the Regional Board from its obligation to consider statistical variability in compliance with federal regulations.

Response: Until adoption of the SIP by the State Water Board, USEPA's Technical Support Document for Water Quality-based Toxics Control (TSD) was the normal protocol followed for permit development for all constituents. The SIP is required only for California Toxics Rule (CTR) and National Toxics Rule (NTR) constituents and prescribes a different protocol when conducting a Reasonable Potential Analysis (RPA), but is identical when developing water quality-based effluent limitations (WQBELs). For some time after SIP adoption, SIP protocols were used for CTR/NTR constituents, and TSD protocols were used for non-CTR/NTR constituents. While neither protocol is necessarily better or worse in every case, using both protocols in the same permit has led to confusion by dischargers and the public, and greater complexity in writing permits. Currently there is no State or Regional Water Board Policy that establishes a

recommended or required approach to conduct an RPA or establish WQBELs for non-CTR/NTR constituents. However, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control. The SIP states in the introduction “*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*” Therefore, for consistency in the development of NPDES permits, we have begun to use the RPA procedures from the SIP to evaluate reasonable potential for both CTR/NTR and non-CTR/NTR constituents.

CSPA COMMENTS, 22 SEPTEMBER 2008

CSPA COMMENT # 1: We agree with staff's removal of qualifications regarding enforceability of receiving water limitations. [Previous Order No. R5-2002-0083 included, in part, the statements "*However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Regional Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred.*"]

Response: Comment noted.

CSPA COMMENT # 2: The [proposed Orders'] failure to include mass-based effluent limitations for several pollutants violates the Clean Water Act's requirements to express effluent limitations in terms of mass loading. As the Clean Water Act permitting authority in the Central Valley, the Regional Board must include terms in NPDES permits apply and ensure compliance with any applicable requirements of sections 301, 302, 306, 307, and 403 of the Clean Water Act. 33 U.S.C. §1342(b)(1)(A); 40 C.F.R. § 123.25.

Response: See Response to CSPA Comments #9 and #15, above.

CSPA COMMENT # 3: The relaxing of effluent limitations found in the 2002 Permit for certain constituents, including the removal of any effluent limitation for some constituents such as oil and grease, violates the Clean Water Act's anti-backsliding provisions. Federal and State law obligates the Regional Board to issue permits consistent with the federal requirements for NPDES permitting, including specifically the antibacksliding provisions of section 402(o) of the Clean Water Act and 40 C.F.R. 122.44. See 33 U.S.C. § 1342(b); 40 C.F.R. 123.25; Cal. Water Code § 13377.

Response:

Oil and Grease: See Response to CSPA Comment #6, above.

Turbidity: See Response to CSPA Comment #14, above.

Other constituents: The commenter contends that at least 13 pollutants contained in previous Order No. R2-2002-0083 are less stringent, or are not contained, in the proposed Order, which constitutes backsliding. Regional Water Board staff disagrees. The Fact Sheet within the proposed Order evaluates pollutant by pollutant whether or not concentrations are discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any state water quality standard. The proposed Order was modified to add a discussion of Regional Water Board staff's analysis for Chloroform and Dichloromethane. As described in the Fact Sheet, Regional Water Board staff analyzed the Discharger's self-monitoring effluent data and upstream receiving water data, and considered the nature of the Facility's

operations to determine if the discharge demonstrates reasonable potential to exceed applicable water quality criteria or objectives. Using the method prescribed in Section 1.3 of the SIP, Regional Water Board staff compared this data for each pollutant with the applicable water quality objectives in the Basin Plan or water quality criteria from USEPA, and the CTR. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control (Order WQO 2001-16 [Napa] and Order WQO 2004-0013 [Yuba City]). Based on the prescribed methodology in the SIP, Regional Water Board staff finds that the discharge does not demonstrate a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for copper, chloroform, dichloromethane, TCE, 1,1-DCE, PCE, Diazinon, DDT, Endrin Aldehyde, and Lindane. The previous Order No. R5-2002-0083 contained effluent limitations for these constituents; the proposed Order removes the effluent limitations based on new information consistent with anti-backsliding requirements of 40 CFR 122.44(l)(2)(i)(B)(1). The proposed Order requires continued monitoring of these constituents in the background receiving water and the effluent discharge.

CSPA COMMENT # 4: The proposed Permit inappropriately creates loopholes, complicating compliance determinations and enforcement. First, the prohibition of only those by-passes or overflows of waste that reach surface waters unnecessarily complicates the Permit. By imposing the additional requirement that a bypass or overflow reach surface waters, the Regional Board is setting itself up for difficult determinations regarding violations, as well as arguments from the City to avoid liability.

Response: The commenter states that the permit's requirements are overly complicated and limit enforcement. However, the commenter only cites two specific provisions that he believes to be inadequate. The Regional and State Water Boards agree that permits must be clear and enforceable. However, making permits more stringent is different than making them clear and enforceable.

The commenter cites Prohibition III.B., which states "The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H." The commenter argues this provision should also cover all bypass or overflow or, at a minimum, should also cover discharges to storm drains. Bypass or overflow to land may cause human health risks or other nuisance conditions, but the State Water Board addressed these issues when it issued general waste discharge requirements for collection systems (Order No. 2006-0003-DWQ). Discharge and overflow provisions more stringent than Clean Water Act requirements are within the discretion of the Regional Water Board. Regional Water Board staff believes that discharges to land are adequately regulated through Order No. 2006-0003-DWQ. The Discharger has enrolled in that order.

Storm drains may be, but are not necessarily, waters of the United States. In many cases they are point sources that discharge to waters of the United States. Discharges to storm drains that constitute surface waters is within the scope of the prohibition, as are discharges to surface waters through storm drains. Discharges to storm drains are also regulated through Order No. 2006-0003-DWQ.

See response to Comment #5, below.

CSPA COMMENT # 5: The proposed Permit inappropriately creates loopholes, complicating compliance determinations and enforcement. . . Second, by excluding several provisions of the Permit from the enforcement remedies of the Clean Water Act, the Regional Board has diluted the deterrent aspect of the Permit provisions, and thus weakened the overall effectiveness of the Permit in protecting water quality. . . The groundwater limitations are integral to protecting water quality throughout the region, including specifically protecting the beneficial uses of area groundwater, as well as protecting groundwater that may be hydraulically connected to the San Joaquin River and thus capable of providing a conduit for pollutants from the RWCF treatment system to the river.³ Likewise, the operation and maintenance of the treatment ponds, see Permit § VI.C.4.a., will impact water quality by, among other things, ensuring that enough freeboard is available to capture the inflow and infiltration to the system from a large storm and prevent a bypass. It is therefore incorrect to claim that these provisions solely implement State law.

Response: See response to Comment #4, above.

The commenter also argues that Clean Water Act remedies should apply to permit provisions that are based solely on state (non-NPDES) law. Regional Water Board staff agrees that citizen enforcement is an important aspect of the Clean Water Act. However, the Porter-Cologne Water Quality Control Act (Porter-Cologne) does not include similar provisions. Including Porter-Cologne and NPDES requirements in a single order to streamline permitting, compliance and oversight does not make the Clean Water Act applicable to groundwater requirements or pond specifications that are designed to prevent nuisance. The commenter refers to standard language in the statewide permit template that accurately states that the *Water Boards* do not apply NPDES enforcement remedies to non-NPDES provisions. At any rate, if the commenter believes that the Clean Water Act provides citizen remedies for violations of non-NPDES requirements, it is unclear how a finding would eliminate those remedies.

There is no evidence in the record that the ponds are hydrologically connected to surface water in a manner that requires (or allows) NPDES permitting under *Northern California River Watch v. City of Healdsburg* (9th Cir. 2007) 496 F.3d 993.

SDWA COMMENTS

SDWA COMMENT # 1: In regard to the EC Limits contained in the proposed Order, the commenter states:

“Under most circumstances, the discharge water does not have any effect on salinity in the southern Delta, though it is a part of the overall salt balance of the estuary. Under some circumstances, the discharge could affect the salinity of the flows in the San Joaquin, which sometimes has a net flow upstream, and consequently affect the salinity standard measured at Brandt Bridge.

“More importantly, the salinity objective for the Central Delta are 450 EC, measured at San Andreas Landing, significantly downstream of the permittee’s discharge point. Given the difference in what is allowed to be discharged and what the standard is, the question becomes to what degree does the discharge affect the quality of water in the channels needed for local agricultural diversions?

“In the southern Delta, the City of Tracy’s discharge is directly into an area where standards are regularly exceeded and adverse impacts to agriculture occur. The City of Stockton’s discharge is into a much larger channel, in an area with better water quality (as to EC). It therefore may be that the salinity of the discharge is adequately diluted so that no adverse impacts occur to local agriculture.

“The SDWA encourages the Regional [Water] Board and the City of Stockton to make sure the above-referenced dilution is actually occurring. If modeling or other data indicate dilution is not occurring, then the parties should work to develop a program whereby the discharge is adequately dispersed, diluted, or cleaned up in order that in-channel water quality is above the standard. . .”

Response: Based on available receiving water data, there are times when the receiving water is not in compliance with the Bay-Delta Plan objectives for EC. Furthermore, effluent data also indicate that effluent concentrations exceed these water quality objectives. Therefore, the proposed Order includes salinity requirements. An annual average performance-based effluent limitation of 1300 $\mu\text{mhos/cm}$ for EC is required to protect the receiving water from further salinity degradation, and the proposed Order requires the Discharger to develop and implement a Salinity Plan to address the salinity of the discharge. Should the Discharger fail to adequately meet this requirement, the proposed Order requires the Discharger to immediately comply with the seasonal monthly average EC effluent limits of 700 $\mu\text{mhos/cm}$ from April through August and 1000 $\mu\text{mhos/cm}$ from September through March instead, which are based on the Bay-Delta Plan water quality objectives for the geographical location. Compliance with these salinity requirements will result in a salinity reduction in the effluent discharged to the receiving water.

NIAGRA WATER COMMENTS

NIAGRA WATER COMMENT # 1: In regard to the requirements in the proposed Order to monitor TDS and salinity [EC] in the effluent discharge, and to implement a salinity reduction plan, the commenter states:

“We currently employ and support more than sixty families in San Joaquin County and we are an excellent corporate citizen. As a bottled water manufacturer, our discharge [into the City of Stockton’s sanitary sewer system] is made up primarily of effluent from our Reverse Osmosis units. Therefore, one of our biggest concerns when looking at any proposed permit is the imposition of limitations on Total Dissolved Solids (“TDS”). Although the proposed permit does not place any specific limit on TDS, it does require the City of Stockton to monitor TDS and salinity and to implement a salinity reduction plan. Such a plan directly relates to TDS and therefore directly relates to our operation.

We think it is important to illuminate the fact that the City of Stockton currently imposes restrictions on its dischargers relative to TDS, even though the State Board does not currently impose such restrictions. . . we hope the State Board is impressed with the initiative that the City has taken with imposing even more stringent requirements on its dischargers than is required by the Board.

We support the proposed Order, as is, and urge the State Board not to impose any more stringent restrictions on the City of Stockton. Imposition of more stringent salinity limitations and or any limitation on TDS would be fatal to our operations in Stockton.”

Response: Comment noted.

CUWA COMMENTS

CUWA COMMENT # 1: In regards to the proposed Order, CUWA commends Regional Water Board “staff on their commitment to protecting the drinking water beneficial use in the Delta.”

Response: Comment noted.

CUWA COMMENT # 2: CUWA and Regional Water Board staff are working on the technical studies needed to address numerous water quality concerns and to support a Basin Plan amendment to provide greater protection of drinking water supplies. Based on these efforts, CUWA expects that the Basin Plan will be amended in 2009 or 2010 to incorporate additional protection of drinking water supplies. Therefore CUWA requests that a reopener be added to the proposed Order.

Response: The proposed Order has been modified to include the following reopener in section VI.C.1.h:

“**Central Valley Drinking Water Policy.** If water quality objectives are adopted for organic carbon, nutrients, salinity, bromide, or pathogens to protect drinking water supplies in the Central Valley Region, this Order may be reopened for addition and/or modification of effluent limitations and requirements, as appropriate, to require compliance with the applicable water quality objectives.”

CUWA COMMENT # 3: CUWA requests that the proposed Order include a notification requirement to alert downstream drinking water agencies of any wastewater spills that may reach Delta waters.

Response: Due to numerous drinking water intakes in the Delta, immediate notification of downstream water agencies would be required by the proposed Order to minimize any adverse effects resulting from spills of untreated or partially treated wastewater from the Facility or collection system that reach Delta waters. To provide clarification, the Regional Water Board Standard Provisions (Section VI.A.2.f.) of the proposed Order have been modified as follows:

- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal, and adequate public notification to downstream water agencies or others who might contact the non-complying discharge.

The City must maintain an adequate spill response plan that includes a list of persons to notify in the event of a permit violation. Regional Water Board staff discussed CUWA's concern with the City and they would be willing to update its spill response plan to include immediate notification of the requested downstream water agencies² in the event of a spill.

² CUWA requested the following water agencies be notified: Alameda County Flood Control and Water Conservation District, Zone 7; Alameda County Water District; Santa Clara Valley Water District; Contra Costa Water District; California Urban Water Agencies, and Metropolitan Water District of Southern California.

SAN LUIS AND DELTA MENDOTA AUTHORITY AND WESTLANDS WATER DISTRICT COMMENTS

AUTHORITY AND WESTLANDS COMMENT # 1: The commenter contends that [t]he City has long acted in contempt of its responsibilities under that [previous Order No. R5-2002-0083] NPDES permit. Evidence demonstrates the City has, on an ongoing basis, violated discharge prohibitions, effluent limitations, receiving water limitations, and monitoring and reporting obligations under its prior NPDES permit. The Tentative Discharge Requirements reference some of those violations, albeit briefly.

Response: Due to a court-ordered stay, the compliance date for the final ammonia effluent limitations in the prior permit was 10 August 2008, and the compliance date for meeting the tertiary treatment requirements was 25 September 2007. Failure to take the stay into account causes overstatement of the number of permit violations.

In addition, an error was made with regard to the Discharger’s permit violations in section II.D. Compliance Summary, pages F-7 and F-8, in the Fact Sheet of the proposed Order. The proposed Order has been modified to include the Discharger’s record of violations during the period from 1 January 2000 to 30 April 2008, as shown below. ~~Strikethroughs~~ indicate deletions, and underlines indicate insertions.

- ~~1. The Discharger has had an effluent limitation exceedence for discharges from the Facility to the San Joaquin River in May 2004 for pH.~~
- ~~2. The Discharger has had periodic effluent limitation exceedences for discharges from the Facility to the San Joaquin River from 2003 through 2004 for dissolved oxygen.~~
- ~~3. The Discharger has had periodic effluent limitation exceedences for discharges from the Facility to the San Joaquin River in 2006 for cyanide.~~
- ~~4. The Discharger has had an effluent limitation exceedence for discharges from the Facility to the San Joaquin River in October 2006 for dibromochloromethane.~~
- ~~5. The Discharger has had an effluent limitation exceedence for discharges from the Facility to the San Joaquin River in May 2006 through January 2007 for turbidity.~~

Record of Violations (1 January 2000 – 30 April 2008)										
Year:	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<u>Coliform</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>0</u>	
<u>CBOD₅</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	
<u>Dibromochloromethane</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>6</u>	<u>0</u>	

AUTHORITY AND WESTLANDS COMMENT # 2: The changed circumstances in the Delta, the existence of the ongoing violations by the City, and the emergence of new studies and information on the effects of contaminants discharged in the wastewater warrant two immediate actions by the Central Valley Regional [Water] Board. First, any NPDES permit issued by the Central Valley Regional Board to the City should have a shorter term than a 5 year period, currently proposed, with provisions that allow for opening of the permit as new information develops.

Response:

The proposed Order already includes reopener provisions to allow the permit to be reopened as new information develops (see Special Provisions VI.C.1.a and b). This adequately addresses the commenters' concerns. Requiring a permit reissuance in less than five years will just lead to a time-consuming but unnecessary action if there is no new information available yet. However, two new reopener provisions have been added to the proposed Order to specifically address the development of ammonia studies and the Regional Monitoring Program, see below:

- “i. **Ammonia Studies.** The ammonia effluent limitations in this Order are based on USEPA's recommended National Ambient Water Quality Criteria for protection of freshwater aquatic life. However, studies are ongoing to evaluate the effect of ammonia on the inhibition of growth of freshwater diatoms in the Delta, as well as, studies to evaluate the sensitivity of delta smelt to ammonia toxicity. Based on the result of these or other studies, this Order may be reopened to modify the ammonia effluent limitations, as appropriate.”
- “j. **Regional Monitoring Program.** The State and Regional Water Boards are committed to creation of a coordinated Regional Monitoring Program to address receiving water monitoring in the Delta for all Water Board regulatory and research programs. When a Regional Monitoring Program becomes functional, this permit may be reopened to make appropriate adjustments in permit-specific monitoring to coordinate with the Regional Monitoring Program.”

AUTHORITY AND WESTLANDS COMMENT # 3: The commenter further contends that the Central Valley Regional [Water] Board must base its decision to renew the City's NPDES permit upon contemporaneous scientific information and in recognition of the City's contemptuous actions.

The importance of critical review of each effluent limitation proposed for the renewal NPDES permit is demonstrated by identified, high levels of mortality that have occurred for many years in the San Joaquin River, just downstream of the permitted location for the City's discharge. Most recently, in May 2007, a large number of salmon died just below the RWCF [Facility] outfall. Although the Central Valley Regional [Water] Board

determined that the mortality likely occurred at a time when the City was in compliance with the then existing discharge permit [Order No. R5-2002-0083] requirements, scientists concluded that the area was apparently a hostile place for juvenile salmon. (2007 Annual Technical Report on implementation and Monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan, p. 55) [The commenter attached a copy of this report as Exhibit C.]

Response: Regional Water Board staff is engaged with the scientific community to study and document impacts to water quality. When new defensible scientific information is developed, Regional Water Board staff incorporates this information into our proposed permits. The Fact Sheet within the proposed Order details the scientific studies, and the Regional Water Board staffs' analysis, evaluations, and determinations conducted pollutant by pollutant to determine whether or not concentrations are discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality standard. For the most part, the data used was obtained during the term of previous Order No. R5-2002-0083; however, in some cases (e.g. mixing zone analysis or evaluation of ammonia effluent limitations) additional data was used to evaluate hydrologic conditions within the San Joaquin River (e.g. critically dry, above normal, and wet) or to provide a higher degree of confidence. Additionally, Regional Water Board staff considered the nature of the Facility's operations and scientific studies conducted by the Discharger's consultants or by an independent scientific review to determine if the discharge demonstrates reasonable potential to exceed applicable water quality criteria or objectives. Using the method prescribed in Section 1.3 of the SIP, Regional Water Board staff compared this data for each pollutant with the applicable water quality objectives in the Basin Plan or water quality criteria from USEPA, and the CTR. The proposed Order includes several mechanisms to protect the beneficial uses of the receiving water.

With regard to the cited scientific study, the 2007 Annual Technical Report on implementation and Monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan do not support a defensible conclusion that the Facility's discharge caused, or is likely, to cause toxicity in, or impairment of, the receiving water. Instead, the report concludes in regard to the May 2007 incident that "The cause of the high mortality remains unknown" (p. 55 of the report). Regional Water Board staff is supportive of the efforts to address the pelagic organism decline in the Sacramento-San Joaquin Delta, including the work of the researchers from Natural Resource Scientists, Inc., and to protect the migrating juvenile Chinook salmon. However, the study results are preliminary, and other studies are ongoing. When new defensible, scientific information is developed, Regional Water Board staff will incorporate this information into our permits, or reopen them as appropriate.

AUTHORITY AND WESTLANDS COMMENT # 4: The Tentative Discharge Requirements are not consistent with the Bay Delta Plan, or the Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins ("Bay Delta

Plan”). Most obvious, the Tentative Discharge Requirements impose an electrical conductivity (EC) limitation of 1,300 $\mu\text{mhos/cm}$ (annual average), (Tentative Discharge requirements, IV.A.1.j), while the Bay Delta Plan and the Basin Plan impose much more stringent requirements.

The commenter further contends that the support for the EC Limitation documented in the Fact Sheet of the proposed Order (e.g. WQO 2005-005) fails for at least two reasons, 1) the Bay Delta Plan, which the State Water Board adopted after it issued WQO 2005-005, requires the Regional Water Boards to “impose discharge controls on in-Delta discharges of salts by agricultural, domestic, and municipal dischargers,” and 2) the water quality objectives in the Bay Delta Plan and the Basin Plan date back to at least 1995 when the SWRCB issued its “1995 Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary”, and therefore, the Discharger has already had ample time to comply.

Response: Regional Water Board staff disagrees; see Response to SDWA Comment # 1. Furthermore, the proposed findings state that imposing effluent limitations for salinity that require the construction and operation of reverse osmosis facilities to treat discharges prior to implementation of other measures to reduce the salt loading in the Facility’s discharge is not a reasonable approach. As stated in the Fact Sheet, this is consistent with the ruling by the State Water Board in WQO 2005-005. The proposed Order provides reasonable salinity controls that put the Discharger on the path to reducing its salt loading to the Delta.

AUTHORITY AND WESTLANDS COMMENT # 5: The Carryover Of Effluent Limitations from The City’s Prior Permit Fails To Consider Changed Circumstances. . . Two examples where the existing discharge requirements may not be appropriate are the effluent limitations for ammonia and dissolved oxygen.

Response:

Ammonia. The commenter contends that the proposed Order retains the ammonia limitations from previous Order No. R5-2002-0083 based on “an analysis of the maximum and average concentrations of ammonia in effluent and receiving water,” and does not consider emerging scientific research or the ongoing violations by the City of its prior NPDES permit.

Regional Water Board staff disagrees. The commenter refers to two recent summary [scientific] papers, about recent findings by Dr. Richard Dugdale, a researcher at San Francisco State University. The studies analyzed the toxicity of ammonia to marine diatoms in the San Francisco Bay. Additional studies are necessary to determine if the same effects occur in fresh water, such as the Delta. Studies are currently ongoing. At this time, there is no defensible, definitive scientific information to base effluent limitations for ammonia other than EPA’s National Ambient Water Quality Criteria, which were the basis for the

proposed ammonia effluent limitations. If new information is developed, the proposed Order may be reopened to incorporate this information and, if necessary, to modify the ammonia effluent limitations. Section VI.C.1.i of the proposed Order has been modified to include a reopener regarding ammonia studies (see Response to AUTHORITY AND WESTLANDS COMMENT # 2), and the Fact Sheet has been revised accordingly (see Sections IV.C.3.f and VII.B.1.h. of the Fact Sheet in the proposed Order).

Regional Water Board staff disagrees with the commenter's statements that the support in the proposed Order for the ammonia limitations is based on "an analysis of the maximum and average concentrations of ammonia in effluent and receiving water" and that [the proposed Order] does not consider the ongoing violations by the City of its prior NPDES permit. First, based on information included in self-monitoring reports submitted by the Discharger, the Discharger has not violated the ammonia limitations contained in previous Order No. R5-2002-0083 (See Response to AUTHORITY AND WESTLANDS COMMENT # 1). Second, as documented on page F-27 of the Fact Sheet in the proposed Order, using the equations USEPA recommends to calculate total ammonia criteria for the presence of salmonids and early fish life stages, and fifteen (15) years of monitoring data; Regional Water Board staff calculated an acute ammonia toxicity criterion (CMC) for each receiving water pH data value, and a chronic toxicity criterion (CCC) for each paired receiving water 30-day average temperature and pH value. The total ammonia concentrations in the receiving water were compared to the acute and chronic criteria to determine whether, or not, the receiving water exceeded the ammonia criteria during this period (September 1992 through December 2007). As Table F-4 on page F-27 of the Fact Sheet shows, out of the 619 paired datasets (or 1238 comparisons of receiving water concentration to criteria values), the receiving water ammonia concentrations exceeded the ammonia chronic criteria on only five (5) occasions. The acute criteria were never exceeded. Further analysis indicates that when the chronic criteria were exceeded in the receiving water, the effluent ammonia concentrations were about five (5) times the MDEL (5 mg/L) required in the proposed Order (i.e. Jan '00: 24.7 mg/L; Jan '04: 24.4 mg/L; Feb '04: 26 mg/L, 26 mg/L, 25.2 mg/L). The extensive dataset spanned 15 years, which included critically dry and dry hydrological years (i.e. critical low river flow conditions). Based on this evaluation, and evaluation of all available scientific information, Regional Water Board staff concluded that the ammonia effluent limitations at a MDEL of 5 mg/L and an AMEL of 2 mg/L are fully protective of the beneficial uses.

The commenter further contends that the mass limits in the proposed Order "allows an additional one pound of ammonia discharge as both an average monthly and maximum daily figure as compared with the City's prior permit [Order No. R5-2002-0083], which could be construed as an unauthorized relaxation of the permit's requirements." Regional Water Board staff agrees.

The one pound difference was due to rounding. The proposed Order has been changed to carry the same mass limits shown in the previous Order.

Dissolved Oxygen (DO). The commenter contends that the conclusions and analyses [for DO limitations] do not consider important, emerging scientific research or the recognized, ongoing violations by the City of its prior NPDES permit.

The existing effluent limitations are equal to the applicable water quality objectives, consistent with NPDES permitting requirements. The commenter does not specify any research that staff failed to consider. Ongoing violations of existing limitations are not a reason to make the limitations more stringent, if the limitations are otherwise appropriate.

AUTHORITY AND WESTLANDS COMMENT # 6: Need for more Rigorous Monitoring [in the proposed Order]. The commenter contends that [t]he renewal of the City's NPDES permit provides an opportunity to effectuate better monitoring of contaminants. In particular, the City should be required to monitor pharmaceutical constituents in its waste discharges.

Response: The proposed Order contains rigorous monitoring requirements. For example, the proposed Order contains a provision that requires the Discharger to monitor the effluent and receiving water for volatile and semi-volatile organics, inorganics, pesticides, and other constituents like Foaming Agents. In addition, because the Stockton Deep Water Channel is impaired for dissolved oxygen, the proposed Order requires significant receiving water monitoring. Finally, a reopener provision has been added to the proposed Order to allow the permit to be reopened and modified for permit-specific monitoring to coordinate with the Regional Monitoring Program.